

WHAT IS CLAIMED IS:

1. A semiconductor device having a capacitor including a pair of electrodes insulated from each other, comprising:
 - a first conductive layer;
 - an insulation layer formed on said first conductive layer and having
 - 5 a hole reaching said first conductive layer, wherein
 - said hole has a first portion and a second portion having diameters different from each other, the diameter of said hole discontinuously changes at a boundary between said first portion and said second portion; and
 - one electrode of said capacitor formed along an inner wall surface of
 - 10 said hole and electrically connected to said first conductive layer.
2. The semiconductor device having a capacitor according to claim 1, wherein
 - said insulation layer has a first insulation layer and a second insulation layer formed on said first insulation layer,
 - 5 said first portion of said hole is formed in said first insulation layer, and
 - said second portion of said hole is formed in said second insulation layer and has a diameter larger than a diameter of said first portion.
3. The semiconductor device having a capacitor according to claim 1, further comprising
 - a second conductive layer located between said first conductive layer and said one electrode and electrically connected to both of said first
 - 5 conductive layer and said one electrode.
4. The semiconductor device having a capacitor according to claim 1, wherein
 - said first conductive layer has a concave portion connecting to said hole, and said one electrode is formed along an inner wall surface of said
 - 5 concave portion.